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10/044,106	01/11/2002	Li Mo	5022.18-1	8105

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EXAMINER

BHATIA, NEERAJ R

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,106

Applicant(s)

MO ET AL.

Examiner

Neeraj Bhatia

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5,7,11 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-4,6,8-10 and 12-16 is/are rejected.
- 7) ☒ Claim(s) 5,7,11 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 4 in the Detailed Description of the Drawings, Extranet is labeled as #20, which does not match the corresponding number in the drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 6, 12 and 13 rejected under 35 U.S.C. 102(b) as being anticipated by Boivie.

With respects to claims 1, 6, 12 and 13, Boivie in Patent No. 6,625,773 discloses in Fig1 an import filter R1 that receives a list of destinations (column 3 lines37-43).

When R1 receives the packet containing this list of destinations, it needs to properly process the multicast. The router performs a route table lookup to determine the “next hop” for each of the destinations (next hop information), partitions the set of destinations based on their next hops (import target policy), replicates the packet so that there is one copy of the packet for each of the next hops (second subset), modifies the list of destinations in each of the copies so that the list in the copy for a given next hop

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includes just the destinations that ought to be routed through the next hop (modifying the next hop information), and sends the modified copy of the packet onto the next hops (column 4 lines 17-31). Also note, in Fig1, R2, 4 and 5 can only communicate to one another via R3, therefore R3 can be considered a hub node in the network, as can R7 and this router or any other router can act as a CE (customer edge) device as it only needs to be capable of exchanging routing information to the provider edge router.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 8, 9, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boivie in view of Tahan.

With respect to claims 2, 8 and 14 Boivie discloses a system of route target filtering as stated above, but does not disclose the next hop information to be the address of a router serving as a firewall of a network. However, Tahan in Patent No. 6,915,351 discloses a method of community separation using firewalls to control information flow between two or more networks by blocking or permitting flows according to a predetermined set of rules based on the source and destination of the data, the requested service, and other data. Tahan states that firewalls are frequently

used by an enterprise to control the access of those on an external network to the enterprise's internal network. Firewalls may also be used to protect some parts of an inner network from other parts of an inner network (column 2 lines 24-39). It would have been obvious to one skilled in the art at the time of the invention to use a router serving as a firewall of a network in Boivie in order to block or permit flows to the next hop according to a predetermined set of rules.

Regarding claims 3, 9 and 15 Boivie does not disclose the next hop information to be the address of a router serving as a firewall of a virtual private network. However, Tahan discloses that a virtual private network is a well-known method whereby encryption and tunneling are used to create a private network while using a shared or public infrastructure, such as the Internet. For example, a particular enterprise may wish to provide a connection between its computer networks at sites, which are located in different parts of the world. By using VPN technology, the enterprise may utilize the Internet for the communications while ensuring privacy and integrity. Alternatively, an enterprise may wish to share its network resources internally among users in multiple communities. Rather than use a physically separate network or virtual local area network for each community network, an enterprise may employ VPNs to carry traffic for each community over a shared network fabric. With VPNs, cryptographic methods are used to separate the traffic for each community over the same network resources, preventing users in one community from reading or modifying messages sent by users in a different community (column 12 lines 14-34). It would have been obvious to one skilled in the art at the time of the invention to include in Boivie a firewall in a virtual

private network in order to ensure privacy and integrity while sending packets through the network.

6. Claims 4, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boivie in view of Lin.

With respect to claims 4, 10 and 16, Boivie discloses a system as stated above, but does not disclose a re-export filter comprising of a mask, a value for comparison with the route and an action to take in response to a match between the route and the comparison value. However, Lin in Patent No. 6,633,563 discloses a content addressable memory having a search field, a mask and an output for each memory location. An input value and mask are respectively received on a value bus and mask bus. Each of the input value and mask has a number of bits equal to the search field length. The data stored in the output field is generated as output on an output bus if the input value at bit positions specified by the mask bus match the corresponding bits of the search field. That is, only the bits in bit positions specified by the mask may be compared (column 10 lines 13-22). It would have been obvious to one skilled in the art at the time of the invention to include a mask, a value for comparison with the route, and an action to take in response to a match between the route and the comparison value in Boivie in order to provide a method to control what is the deciding factor used to determine if a route is blocked or permitted and to provide a comparison method to decide if a route should be blocked or permitted.

Allowable Subject Matter

7. Claims 5, 7, 11 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rekhter (Patent No. 6,526,056) discloses a virtual private network with provider routers and customer routers exchanging information using next hops. Aysan (Pub No. US 2005/0025069) discloses a deployment of a hub-and-spoke topology virtual private network facilitated by implementing a bi-directional VRF on a hub PE and using the hub PE as a hub-reflector. Lloyd (Pub No. US 2003/0039212) discloses a method using next hops to perform policy based routing in a VPN.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neeraj Bhatia whose telephone number is (571)272-5204. The examiner can normally be reached on Monday through Friday: 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571)272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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